

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A recombinant microorganism prepared by transferring, to a mutant strain of microorganism from which at least one gene participating in membrane permeation of maltose has been deleted or knocked out, a gene encoding a heterologous protein ~~or polypeptide~~ selected from the group consisting of an oxidoreductase, a transferase, a lyase, an isomerase, a ligase/synthetase and a hydrolase, wherein said hydrolase is selected from the group consisting of a cellulase, an  $\alpha$ -amylase, and a protease.

2. (Original) The recombinant microorganism as claimed in claim 1, wherein the gene participating in membrane permeation of maltose is a *Bacillus subtilis* gene *glvR* or *glvC* or a gene functionally equivalent to the gene.

3. (Currently Amended) The recombinant microorganism as claimed in claim 1 ~~or 2~~, wherein the microorganism is ~~*Bacillus subtilis* or another bacterium belonging to~~ is a member of the genus *Bacillus*.

4. (Currently Amended) The recombinant microorganism as claimed in claim 1 ~~any one of claims 1 through 3~~, wherein one or more regions selected from among a transcription initiation regulatory region, a translation initiation regulatory region, and a secretion signal region is ligated to an upstream region of ~~a gene~~ said gene encoding a heterologous protein ~~or polypeptide~~.

5. (Original) The recombinant microorganism as claimed in claim 4, wherein the one or more regions are three regions constituted by a transcription initiation regulatory region, a translation initiation regulatory region, and a secretion signal region.

6. (Currently Amended) The recombinant microorganism as claimed in claim 4 ~~or 5~~, wherein the secretion signal region is derived from a cellulase gene of a bacterium belonging to the genus *Bacillus* and the transcription initiation regulatory region and the translation

initiation regulatory region are each derived from a 0.6 to 1 kb region upstream of the cellulase gene.

7. (Original) The recombinant microorganism as claimed in claim 5, wherein the three regions constituted by the transcription initiation regulatory region, the translation initiation regulatory region, and the secretion signal region are a nucleotide sequence of base numbers 1 to 659 of a cellulase gene of SEQ ID NO: 1; a nucleotide sequence of base numbers 1 to 696 of a cellulase gene of SEQ ID NO: 3; a DNA fragment having a nucleotide sequence having 70% homology with either of these nucleotide sequences; or a DNA fragment having a nucleotide sequence lacking a portion of any one of these nucleotide sequences.

8. (Currently Amended) A method for producing a protein ~~or polypeptide~~ by employment of a recombinant microorganism as defined in claim 1 ~~any one of claims 1 through 7~~.

9. (Currently Amended) A method for producing a protein ~~or polypeptide~~, ~~characterized by~~ comprising culturing a recombinant microorganism as defined in claim 1 ~~any one of claims 1 through 7~~ in a culture medium containing maltose.

10. (New) The recombinant microorganism as claimed in claim 1, wherein the gene participating in membrane permeation of maltose encodes a PTS maltose-specific enzyme IICB.

11. (New) The recombinant microorganism as claimed in claim 1, wherein the gene participating in membrane permeation of maltose encodes a positive regulator for the *glvARC* operon.

12. (New) The recombinant microorganism as claimed in claim 1, wherein the microorganism is *Bacillus subtilis*.

13. (New) The recombinant microorganism as claimed in claim 1, wherein said heterologous protein is an oxidoreductase.

14. (New) The recombinant microorganism as claimed in claim 1, wherein said heterologous protein is a transferase.

15. (New) The recombinant microorganism as claimed in claim 1, wherein said heterologous protein is a lyase.

16. (New) The recombinant microorganism as claimed in claim 1, wherein said heterologous protein is an isomerase.

17. (New) The recombinant microorganism as claimed in claim 1, wherein said heterologous protein is a ligase/synthetase.

18. (New) The recombinant microorganism as claimed in claim 1, wherein said heterologous protein is a hydrolase, wherein said hydrolase is selected from the group consisting of a cellulase, an  $\alpha$ -amylase, and a protease.

19. (New) The recombinant microorganism as claimed in claim 18, wherein said hydrolase is a cellulase.

20. (New) The recombinant microorganism as claimed in claim 18, wherein said hydrolase is an  $\alpha$ -amylase.

21. (New) The recombinant microorganism as claimed in claim 18, wherein said hydrolase is a protease.

22. (New) A recombinant microorganism prepared by transferring, to a mutant strain of microorganism from which at least one gene participating in membrane permeation of maltose has been deleted or knocked out, a gene encoding a heterologous protein or polypeptide,

wherein three regions constituted by a transcription initiation regulatory region, a translation initiation regulatory region, and a secretion signal region are ligated to an upstream region of the gene encoding the heterologous protein or polypeptide,

wherein the secretion signal region is derived from a cellulase gene of a bacterium belonging to the genus *Bacillus* and the transcription initiation regulatory region and the translation initiation regulatory region are each derived from a 0.6 to 1 kb region upstream of the cellulase gene.

23. (New) A method for producing a protein or polypeptide by employment of a recombinant microorganism as defined in claim 22.

24. (New) A method for producing a protein or polypeptide, comprising culturing a recombinant microorganism as defined in claim 22 in a culture medium containing maltose.

25. (New) The recombinant microorganism as claimed in claim 22, wherein the gene participating in membrane permeation of maltose encodes a PTS maltose-specific enzyme IICB.

26. (New) The recombinant microorganism as claimed in claim 22, wherein the gene participating in membrane permeation of maltose encodes a positive regulator for the *glvARC* operon.

27. (New) The recombinant microorganism as claimed in claim 22, wherein the microorganism is *Bacillus subtilis*.

28. (New) The recombinant microorganism as claimed in claim 22, wherein said heterologous protein is an oxidoreductase.

29. (New) The recombinant microorganism as claimed in claim 22, wherein said heterologous protein is a transferase.

30. (New) The recombinant microorganism as claimed in claim 22, wherein said heterologous protein is a lyase.

31. (New) The recombinant microorganism as claimed in claim 22, wherein said heterologous protein is an isomerase.

32. (New) The recombinant microorganism as claimed in claim 22, wherein said heterologous protein is a ligase/synthetase.

33. (New) The recombinant microorganism as claimed in claim 22, wherein said heterologous protein is a hydrolase, wherein said hydrolase is selected from the group consisting of a cellulase, an  $\alpha$ -amylase, and a protease.

34. (New) The recombinant microorganism as claimed in claim 33, wherein said hydrolase is a cellulase.

35. (New) The recombinant microorganism as claimed in claim 33, wherein said hydrolase is an  $\alpha$ -amylase.

36. (New) The recombinant microorganism as claimed in claim 33, wherein said hydrolase is a protease.

37. (New) A recombinant microorganism prepared by transferring, to a mutant strain of microorganism from which at least one gene participating in membrane permeation of maltose has been deleted or knocked out, a gene encoding a heterologous protein or polypeptide,

wherein three regions constituted by a transcription initiation regulatory region, a translation initiation regulatory region, and a secretion signal region are ligated to an upstream region of the gene encoding the heterologous protein or polypeptide,

wherein the three regions constituted by the transcription initiation regulatory region, the translation initiation regulatory region, and the secretion signal region are a nucleotide

sequence of base numbers 1 to 659 of a cellulase gene of SEQ ID NO: 1; a nucleotide sequence of base numbers 1 to 696 of a cellulase gene of SEQ ID NO: 3; a DNA fragment having a nucleotide sequence having 70% homology with either of these nucleotide sequences; or a DNA fragment having a nucleotide sequence lacking a portion of any one of these nucleotide sequences.

38. (New) A method for producing a protein or polypeptide by employment of a recombinant microorganism as defined in claim 37.

39. (New) A method for producing a protein or polypeptide, comprising culturing a recombinant microorganism as defined in claim 37 in a culture medium containing maltose.

40. (New) The recombinant microorganism as claimed in claim 37, wherein the gene participating in membrane permeation of maltose encodes a PTS maltose-specific enzyme IICB.

41. (New) The recombinant microorganism as claimed in claim 37, wherein the gene participating in membrane permeation of maltose encodes a positive regulator for the *glvARC* operon.

42. (New) The recombinant microorganism as claimed in claim 37, wherein the microorganism is *Bacillus subtilis*.

43. (New) The recombinant microorganism as claimed in claim 37, wherein said heterologous protein is an oxidoreductase.

44. (New) The recombinant microorganism as claimed in claim 37, wherein said heterologous protein is a transferase.

45. (New) The recombinant microorganism as claimed in claim 37, wherein said heterologous protein is a lyase.

46. (New) The recombinant microorganism as claimed in claim 37, wherein said heterologous protein is an isomerase.

47. (New) The recombinant microorganism as claimed in claim 37, wherein said heterologous protein is a ligase/synthetase.

48. (New) The recombinant microorganism as claimed in claim 37, wherein said heterologous protein is a hydrolase, wherein said hydrolase is selected from the group consisting of a cellulase, an  $\alpha$ -amylase, and a protease.

49. (New) The recombinant microorganism as claimed in claim 48, wherein said hydrolase is a cellulase.

50. (New) The recombinant microorganism as claimed in claim 48, wherein said hydrolase is an  $\alpha$ -amylase.

51. (New) The recombinant microorganism as claimed in claim 48, wherein said hydrolase is a protease.